2 Sheets--Sheet 1.

R. M. TREAT.

Improvement in Horse-Hay-Rakes.

No. 114,368. Patented May 2, 1871.

Fig 1

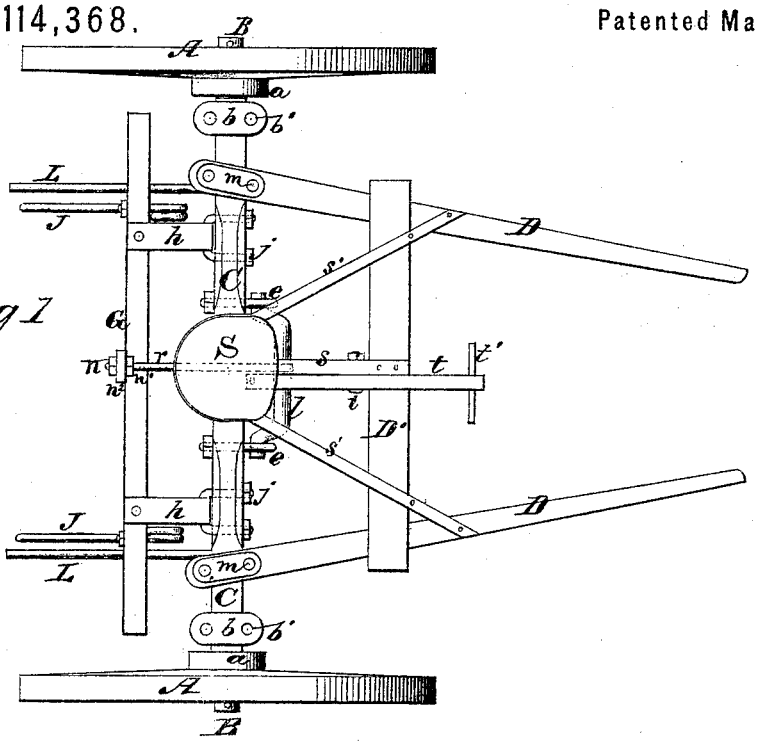
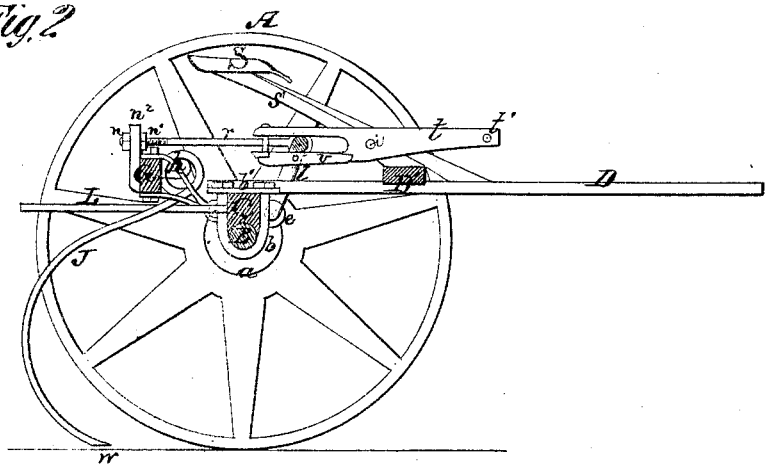


Fig 2



Witnesses.
T. J. Campbell.
J. N. Campbell.

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R. M. Treat
by
Munn, Fenwick & Lawrence

2 Sheets--Sheet 2.

R. M. TREAT.

Improvement in Horse Hay-Rakes.

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Fig. 3

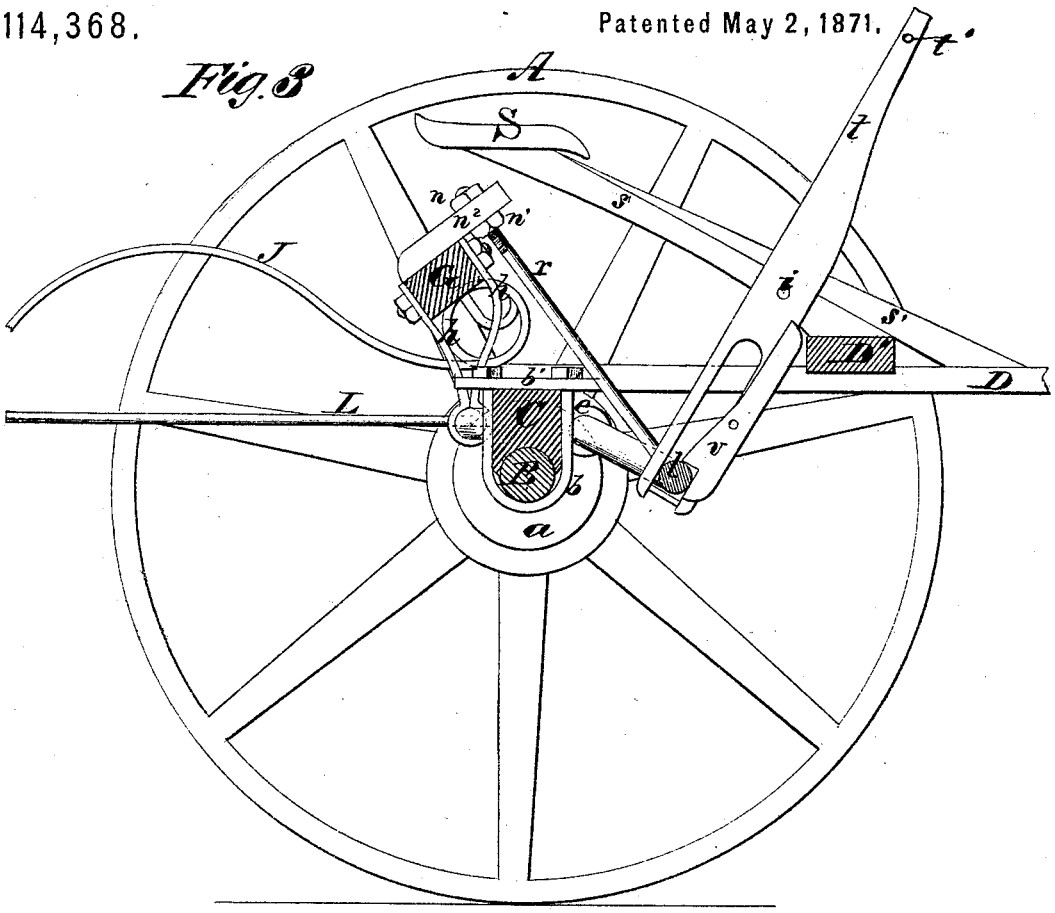
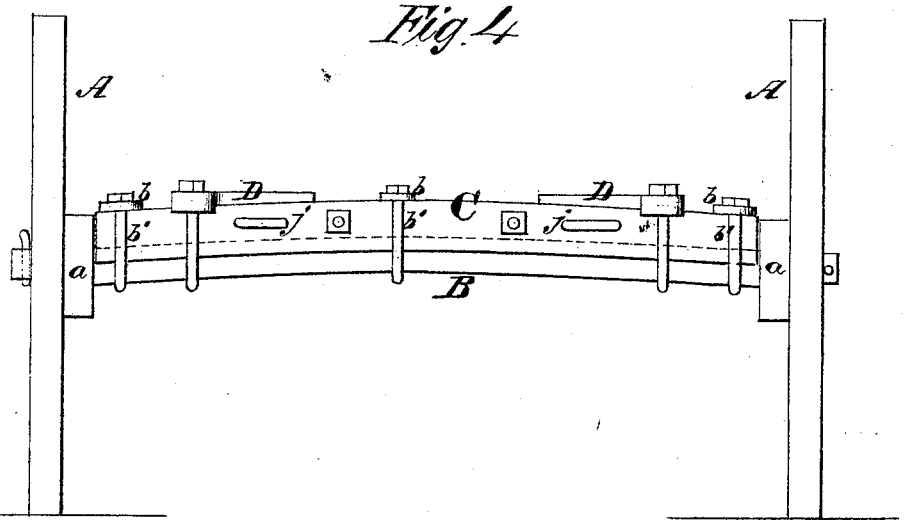


Fig. 4



Witnesses.
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J. N. Campbell

Inventor
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United States Patent Office.

ROBERT M. TREAT, OF MORRIS, CONNECTICUT.

Letters Patent No. 114,368, dated May 2, 1871.

IMPROVEMENT IN HORSE HAY-RAKES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ROBERT M. TREAT, of Morris, in the county of Litchfield and State of Connecticut, have invented a new and useful Improvement in Horse Hay-Rakes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1, plate 1, is a top view of the improved rake.

Figure 2, plate 1, is a section taken vertically and longitudinally through the rake, with the rake-teeth in working position.

Figure 3, plate 2, is an enlarged sectional view, showing the rake-teeth raised and locked in this position.

Figure 4, plate 2, is a rear view, showing the manner of constructing the axle of the rake-carriage.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements on wheel hay-rakes, wherein a seat is provided for the attendant to ride on the machine, and wherein the tines are applied to a bar which is connected to the axle of the carriage by means of hinges, and furnished with contrivances which will allow the attendant to raise the tines at pleasure and secure them in an elevated position.

The following description will enable others skilled in the art to understand my invention.

In the accompanying drawing—

A A represent two transporting-wheels, which are constructed with their hubs *a a* on the inner sides, so that there shall be no projections on their outer sides which would interfere in passing through gates and other narrow openings.

The wheels A A are applied on the ends of a metal rod or axle, B, which is bent in the form of an arch, as shown in fig. 4, and sustained in this form by means of a wooden tree or bolster, C.

The arch form given to the axle is intended to prevent this axle from sagging under the weight of the attendant, and the strain to which it is subjected.

To retain this arched form of the axle, the wooden bolster C is grooved along its bottom to receive into it the rod B, the latter is then secured fast to the bolster C by a clip, *b b'*, applied at the middle of its length. The rod B is then sprung or bent into the said groove and secured permanently in place by means of clips *b b'*, applied near the extremities of the axle. The bolster thus serves as a brace to retain the arched form, while it also serves to stiffen the axle. In this way I make a very light and strong axle, which will not sag nor sink in the center, and which is peculiarly applicable to a rake, for the reason that the points of the tines will maintain the position to which they are at first adjusted, which would not be the case if the axle sagged in the center.

The thills D D are secured on top of the wooden bolster C by means of clips, as shown in the drawing, which clips assist in confining the rod B to the bolster, and across these thills, in front of the axle, is a foot-bar and brace, D', rising from which is a standard, *s*. This standard *s*, together with two braces, *s' s'*, extends back and supports a seat, S, for the attendant.

In rear of the axle is a rake-head, G, which is connected to the rear side of the axle by means of straps *h* and eyes *j*, forming long hinge-connections, which will allow the rake-head to rise and descend.

The straps *h h* are forked, as shown in figs. 2 and 3, and their rear extremities are bolted to the upper and lower edges of the rake-head G, so that these straps brace and hold firmly the head.

To the front of this head the curved tines are secured by their coiled portions. These tines extend back of, beneath, and in contact with the head G, and terminate in beveled raking-points W, the lower surfaces of which are parallel to the surface of the ground when the teeth are in raking position, as shown in fig. 2.

The rake-head G is connected to a foot-stirrup, *l*, by means of an adjusting-rod, *r*, the screw-threaded portion of which passes through a portion, n^2, made fast to the head G, and receives an adjusting-nut, *n*, and a jam-nut, n^1.

The front end of the rod *r* has an eye formed on it, by which it is attached to the stirrup *l*, so as to allow free articulation in the act of raising and depressing the tines.

The stirrup *l* is pivoted to eyes *e*, which are fastened into the front side of the wooden part of the axle, and to this stirrup the forked end of a foot-lever, *t*, is applied, as shown in figs. 2 and 3.

This foot-lever *t* is pivoted at *i* to the seat-standard *s*, and to its front end a foot-rest, *t'*, is applied, on which either one or both the feet of the attendant will be applied when he desires to depress the rake-teeth.

For the purpose of holding the rake in an elevated position without the aid of the attendant, a foot-latch, *v*, is pivoted to the lever *t* in a position to catch over the stirrup *l* when the rake-teeth are raised, as shown in fig. 3.

The rods L, which are secured into the axle and extended out in rear thereof, are intended for clearing the tines J of hay when the latter are thrown up.

The long stirrup *l*, above described, allows the attendant while sitting on the seat S to raise the rake-teeth free of the ground when he desires to discharge a gathered load; and this he can do with either one or both of his feet.

The long slotted foot-lever *t* is used for allowing the

attendant to keep the raking ends of the tines down to their work under a varying pressure.

Having described my invention,

What I claim as new is—

1. The long forked hinging straps *h h*, formed as shown by doubling and bending the metal, in combination with the eyes *j j*, axle B C, and the rake-head G, the combination and arrangement being as shown, so that the prongs or arms of the straps clasp the top and bottom of the rake-head so as to prevent splitting, and are confined to it by vertical bolts, all as and for the purpose described.

2. The forked foot-lever *t*, the vibrating stirrup *l*, and the adjusting-rod *r*, combined and arranged in a wheel hay-rake, substantially as described.

3. The foot-latch *v* applied to the foot-lever *t*, and combined with the stirrup *l* and rod *r*, substantially as and for the purposes described.

ROBERT M. TREAT.

Witnesses:

GARRY H. MINER,

JOSEPH W. MASON.